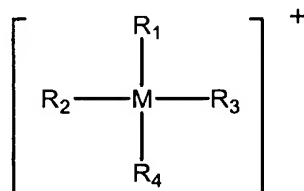


What is claimed is:

1. 26. A process for preparing a nanocomposite comprising:
- a. preparing an organoclay material by reacting a swellable layered clay with an onium ion represented by Formula (I):



wherein

- (i) M is nitrogen or phosphorus,
- (ii) R₁ is a straight or branched alkyl group having at least 8 carbon atoms,
- (iii) R₂, R₃, and R₄ are independently selected from organic or oligomeric ligands or hydrogen, and
- (iv) at least one of R₂, R₃, and R₄ comprises an alkylene oxide group having from 2 to 6 carbon atoms or a polyalkylene oxide group, and
- b. melt mixing the organoclay material with an expanding agent, and
- c. melt extruding the expanded organoclay and a polymer to provide a nanocomposite.

2. 27. The process of claim 26, wherein the organoclay material contains platelet particles and the expanding agent separates the platelet particles.

3. 28. The process of claim 26, wherein R₂, R₃, and R₄ are not hydrogen.

4. 29. The process of claim 26, wherein at least one of R₂, R₃, and R₄ is an alkyl group having from 1 to 4 carbon atoms.

5-30. The process of claim 26, wherein R₁ is a straight or branched alkyl group having from 8 to 25 carbon atoms.

6-31. The process of claim 26, wherein the alkylene oxide group is a 2-hydroxyethyl group.

7-32. The process of claim 26, wherein the onium ion is bis(2-hydroxyethyl)octadecyl methyl ammonium, or bis(2-hydroxyethyl) methyl tallow ammonium.

8-33. The process of claim 26, wherein the expanding agent is an oligomer.

9-34. The process of claim 26, wherein the expanding agent is a polymer having a molecular weight from about 250 to about 25,000.

10-35. The process of claim 26, wherein the expanding agent is an oligomeric polyamide.

11-36. The process of claim 26, wherein the polymer is a thermoplastic polymer, a mixture of thermoplastic polymers, a vulcanized resin, or a thermoplastic resin.

12-37. The process of claim 26, wherein the polymer is a polyester.

13-38. The process of claim 26, wherein the organoclay material is incorporated in an amount from about 0.01 to 20% by weight of the mixture.

14-39. The process of claim 26, wherein the polymer is a polyamide.

15-40. The process of claim 26, wherein the polymer and the expanding agent are polyamides.

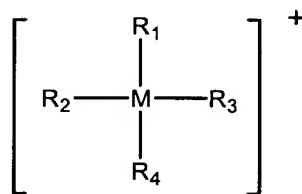
16-41. The process of claim 26, wherein the expanding agent is an oligomer.

17-42. The process of claim 26, wherein the polymer is a copolyamide or terpolyamide

18-43. The process of claim 26, wherein the polymer is poly(m-xylene adipamide).

19-44. A process for preparing a nanocomposite comprising:

- a. preparing an organoclay material by reacting a swellable layered clay with an onium ion represented by Formula (I):



wherein

- (i) M is nitrogen or phosphorus,
 - (ii) R₁ is a straight or branched alkyl group having at least 8-25 carbon atoms,
 - (iii) R₂, R₃, and R₄ are organic ligands, and
 - (iv) at least one of R₂, R₃, and R₄ is an alkylene oxide group having from 2 to 6 carbon atoms, and
- b. melt mixing the organoclay material with a polyamide oligomer, and
- c. melt extruding the expanded organoclay and a polyamide to provide a nanocomposite.

20-45. The nanocomposite produced by the process of claim 44.